

REMARKS

In the outstanding Office Action, claims 1 to 8 were presented for examination. Applicant notes with appreciation the acknowledgment of the receipt of papers submitted under 35 USC 119. Claims 1-8 have been rejected under 35 USC 112 on formal grounds. Claims 1-6 have been rejected on the basis of patents to Takechi (claims 1 and 5), Takechi in view of Siemer (claim 2), and Takechi in view of Ishizuka (claims 3, 4 and 6). In addition, objections were advanced against the drawings on formal grounds.

The Office Action has been most carefully studied. In this amendment applicant has amended claims 1-8 to conform with the formal requirements of the Office. The new and amended claims have been carefully written to avoid any questions under 35 U.S.C. §112, in accordance with the guidelines and requirements set forth in the outstanding Office Action. Accordingly, as will be discussed in detail below, it is believed that the application is clearly in condition for allowance.

Drawings

Corrected drawings are being filed by first class mail with this amendment. Reference numerals and letters have been removed from the inside of the boxes in the diagram of figure 1, and place beside the appropriate boxes with lead lines. In similar fashion, descriptive material from the text has been used to label the inside of the boxes. In the drawings, relay R1, labeled S1, and identified by its contacts RS in the specification has been properly labeled. Thus, no new matter has been entered. Likewise, the OR gate described at page 7, line 24 has been labeled in the drawings with the conventional OR gate symbol included.

Specification Objections - 35 U.S.C. §112

The specification has been carefully reviewed and the requested correction of minor errors has been made to bring it into conformance with proper idiomatic English

in compliance with 37 CFR 1.52. The specific sentences kindly pointed out by the Examiner have been addressed.

Claim Rejections - 35 U.S.C. §112 Paragraph Two: Indefiniteness

The claims have been carefully reviewed and amended to be in compliance with the rules. Here again, the specific instances and suggestions of the examiner have been incorporated into the specification.

Claim Rejections - 35 U.S.C. §102

The applicant respectfully disagrees with the position of the Office. While the discussion starting on the last paragraph of page 6 till the end of point 12 is somewhat unclear, it appears that the Office is stating that the continuous monitoring of the state of the battery from time to time is an inherent function, as is to resume charging if a parameter has returned to the normal range. Of course, the question before the Office is whether the particular recitations of the claims, which are more detailed than this, are met. It has not been asserted, in so many words, that the particular recitations of claim 1 are an inherent function of a charger. Indeed, the art does not teach the inventive combination including a final prohibition and a conditional prohibition. Takechi, in particular, does not distinguish these two conditions, while it does appear to have been cited on this point.

According to the present invention the charging process is at least finally stopped (until the battery is taken out of the circuit) when the parameters are so far out of the normal range that any continued charging would cause damage either to the battery or to the charger. If such a final prohibition takes place, the continuous inspection of the parameters will have no effect, and the charging process is definitely stopped. This is subject to the manual restart, which is a non-automated process.

On the other hand, certain conditions are regarded as conditional, prohibiting

events, and if any of these conditions take place, the charging is interrupted. The charging is not resumed if the same condition ceases to exist, since the restart condition is offset from the associated conditional prohibition parameters. Takechi does not distinguish the final and conditional charge prohibitions and does not mention the hysteresis property of the restart and stop condition, as recited in claim 1.

The 102 rejection is thus clearly not applicable in this regard. Furthermore, Takechi does not mention the end-of-charge condition which is defined in a very unique way in the present claim 1. This characteristic alone justifies allowance of the application. Accordingly, new claim 9 is believed to be in condition for allowance. Given this patentable limitation and given the other patentable aspects of the invention, it is respectfully submitted that claim 1 is in condition for allowance.

Claim Rejections - 35 U.S.C. §103

The present invention is far more advanced than the cited prior art, and the circuit defined in claim 1 provides optimum charging conditions, since the charging process is kept within allowable limits by the final conditional and conditional charge prohibition circuit and by the specified restart conditions, which together cooperate to provide a particularly effective battery the charger which recharges batteries quickly but still protects the charger and the battery.

A further feature of the invention lies in that the charging is not only kept within permitted voltage, current and temperature ranges, but the charging process is terminated upon a very specific end-of-charge condition, that prevents overcharge and extends thereby the life time and cycle number of the battery. The cited prior art does not show any similar circuit, and the present invention provides an optimum environment for the charger. Accordingly, claims 2-8 which go on to limit claim 1, which is believed to be allowable, as noted above, are believed to be most clearly in condition for allowance and such action is respectfully sought.

In view of the above amendments and the discussion relating thereto, it is respectfully submitted that the instant application, as amended, is in condition for allowance. Such action is most earnestly solicited. If for any reason the Examiner feels that consultation with Applicant's representative would be helpful in the advancement of the prosecution, he or she is invited to call the telephone number below for an interview.

Respectfully submitted,

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